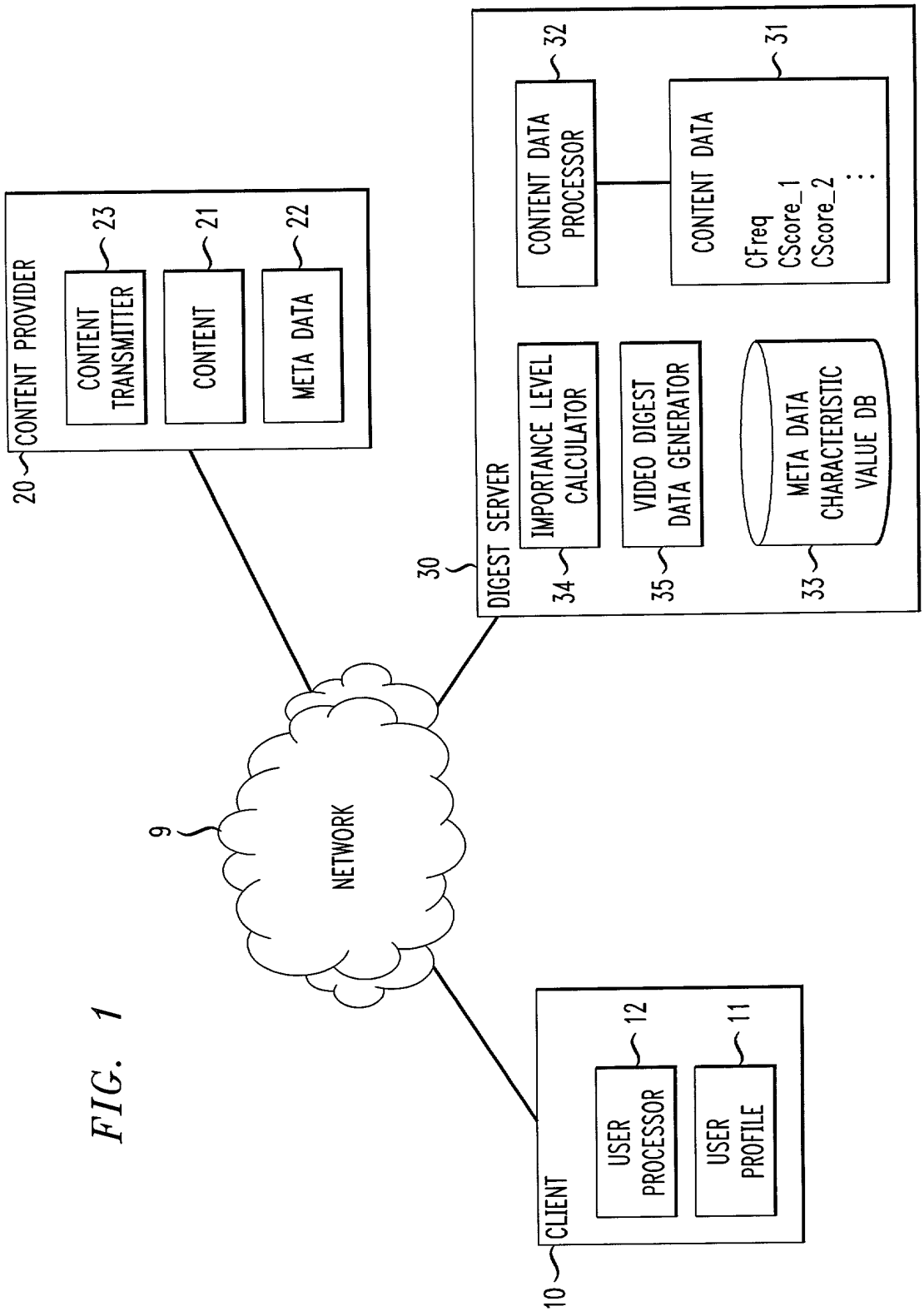

CONTENT PROVIDER
CONTENT TRANSMITTER
CONTENT
META DATA
20
23
21
22
NETWORK
9
DIGEST SERVER
IMPORTANCE LEVEL CALCULATOR
VIDEO DIGEST DATA GENERATOR
META DATA CHARACTERISTIC VALUE DB
CONTENT DATA PROCESSOR
CONTENT DATA
CFreq
CScore_1
CScore_2
30
34
35
33
32
31
CLIENT
USER PROCESSOR
USER PROFILE
10
12
11

FIG. 1

FIG. 2

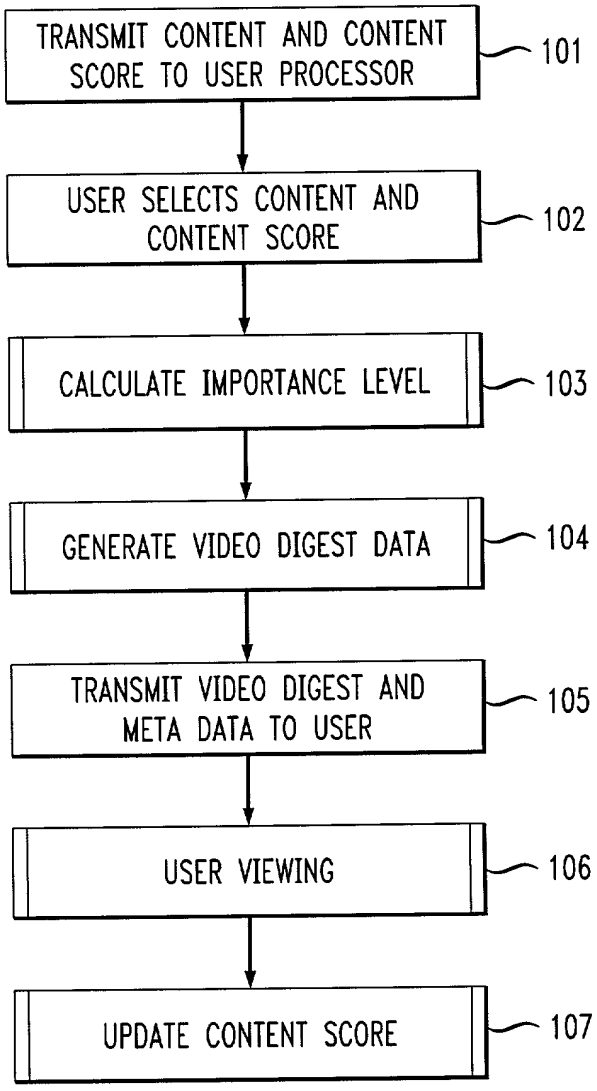

TRANSMIT CONTENT AND CONTENT SCORE TO USER PROCESSOR
101
USER SELECTS CONTENT AND CONTENT SCORE
102
CALCULATE IMPORTANCE LEVEL
103
GENERATE VIDEO DIGEST DATA
104
TRANSMIT VIDEO DIGEST AND META DATA TO USER
105
USER VIEWING
106
UPDATE CONTENT SCORE
107

FIG. 3

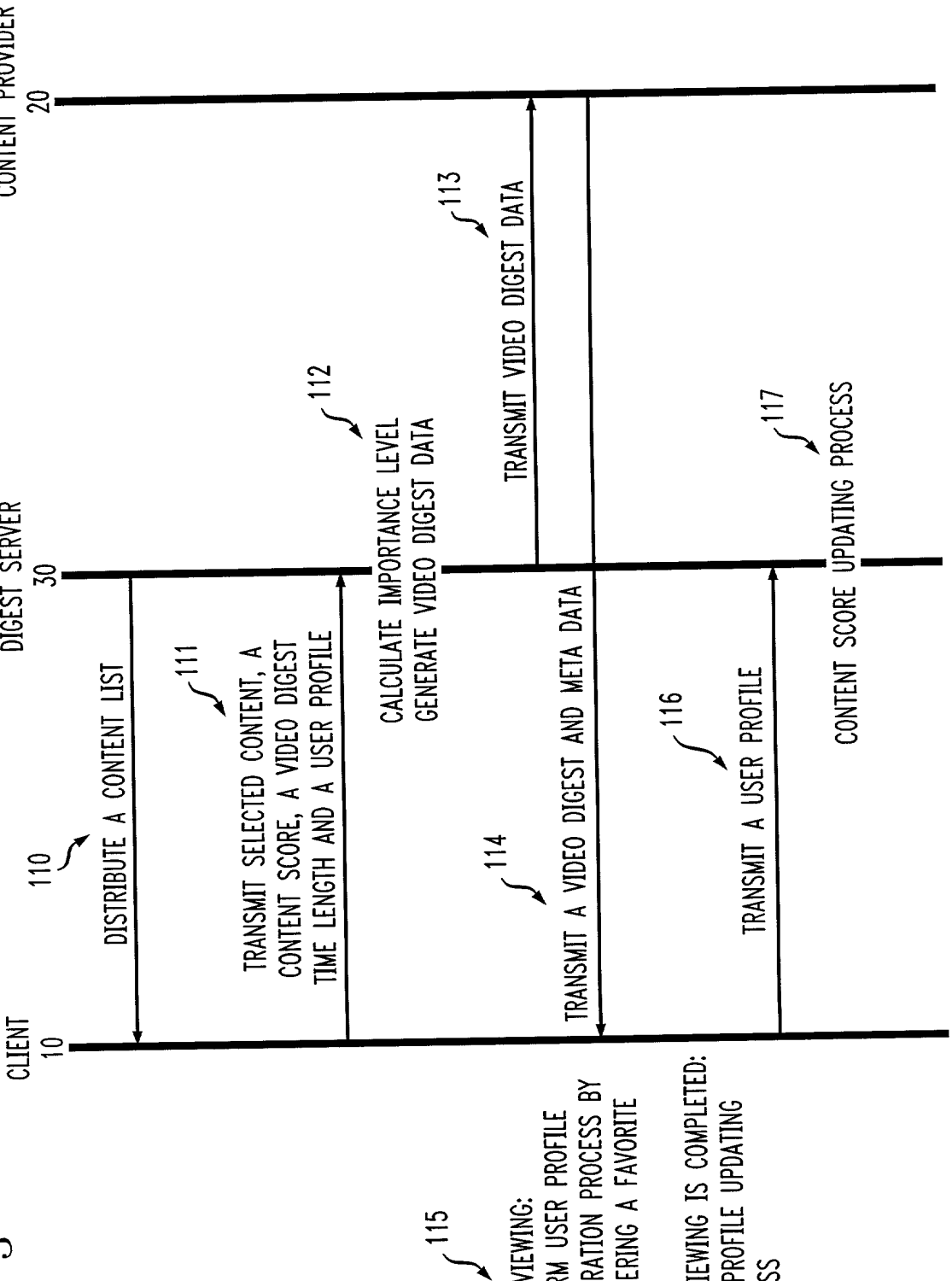
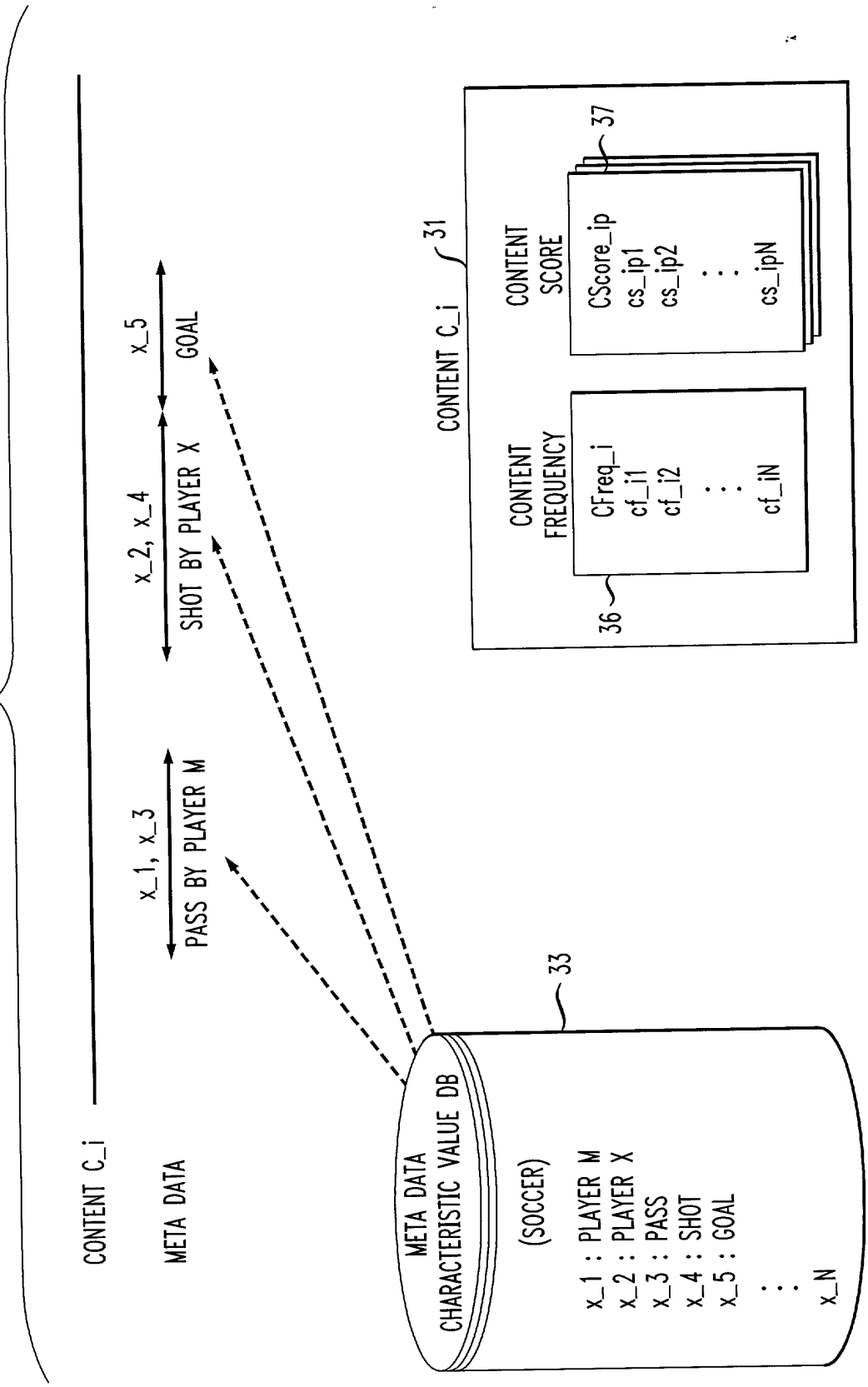


FIG. 4


CONTENT C_i
META DATA
x_1, x_3
PASS BY PLAYER M
x_2, x_4
x_5
SHOT BY PLAYER X
GOAL
META DATA
CHARACTERISTIC VALUE DB
(SOCCER)
x_1 : PLAYER M
x_2 : PLAYER X
x_3 : PASS
x_4 : SHOT
x_5 : GOAL
x_N
33
CONTENT C_i
31
CONTENT FREQUENCY
CFreq_i
cf_i1
cf_i2
cf_iN
36
CONTENT SCORE
CScore_ip
cs_ip1
cs_ip2
cs_ipN
37

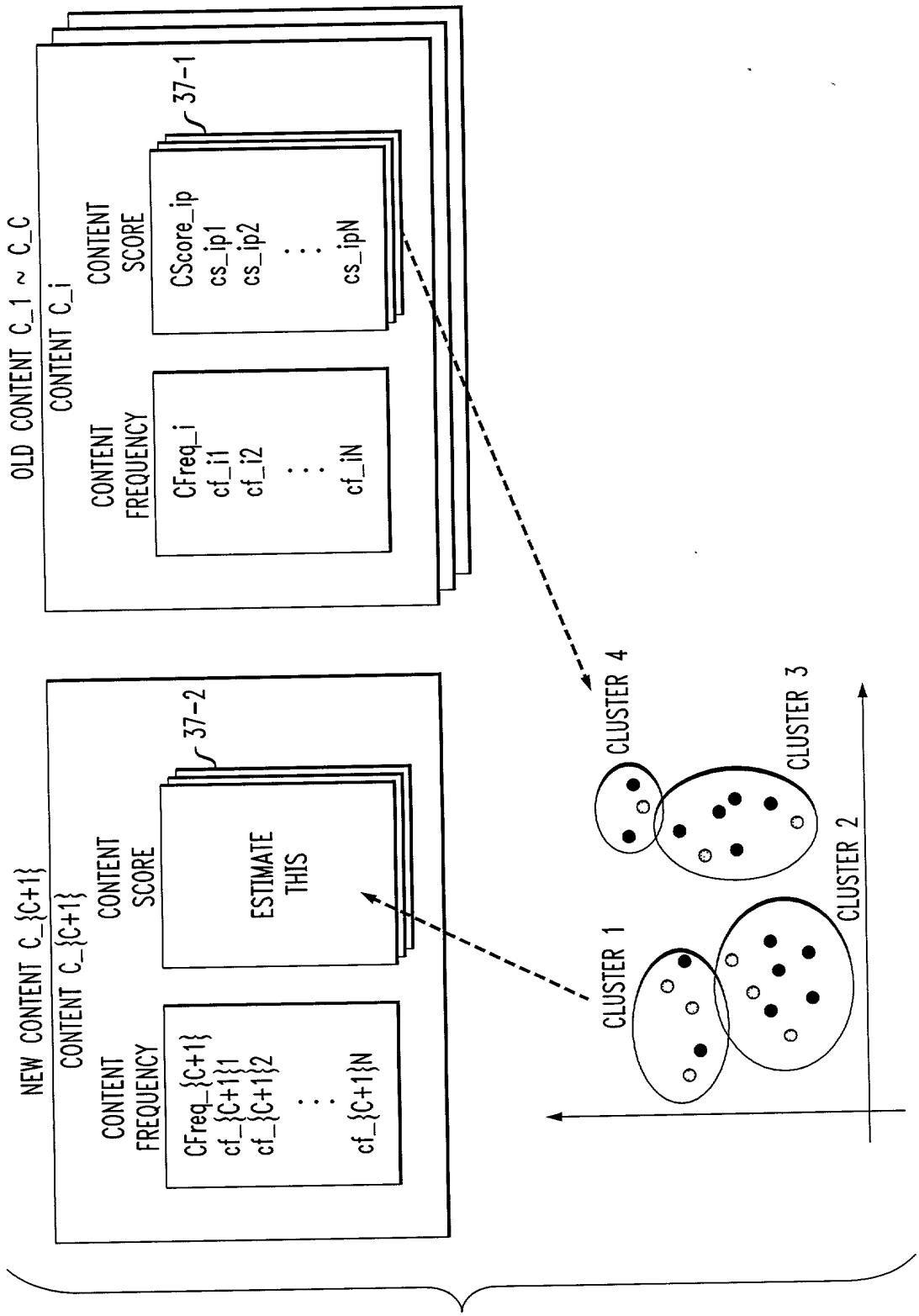

OLD CONTENT C_1 ~ C_C
CONTENT C_i
CONTENT FREQUENCY
CFreq_i
cf_i1
cf_i2
cf_iN
CONTENT SCORE
CScore_ip
cs_ip1
cs_ip2
cs_ipN
37-1
NEW CONTENT C_{C+1}
CONTENT C_{C+1}
CONTENT FREQUENCY
CFreq_{C+1}
cf_{C+1}1
cf_{C+1}2
cf_{C+1}N
CONTENT SCORE
ESTIMATE THIS
37-2
CLUSTER 1
CLUSTER 2
CLUSTER 3
CLUSTER 4

FIG. 5

FIG. 6

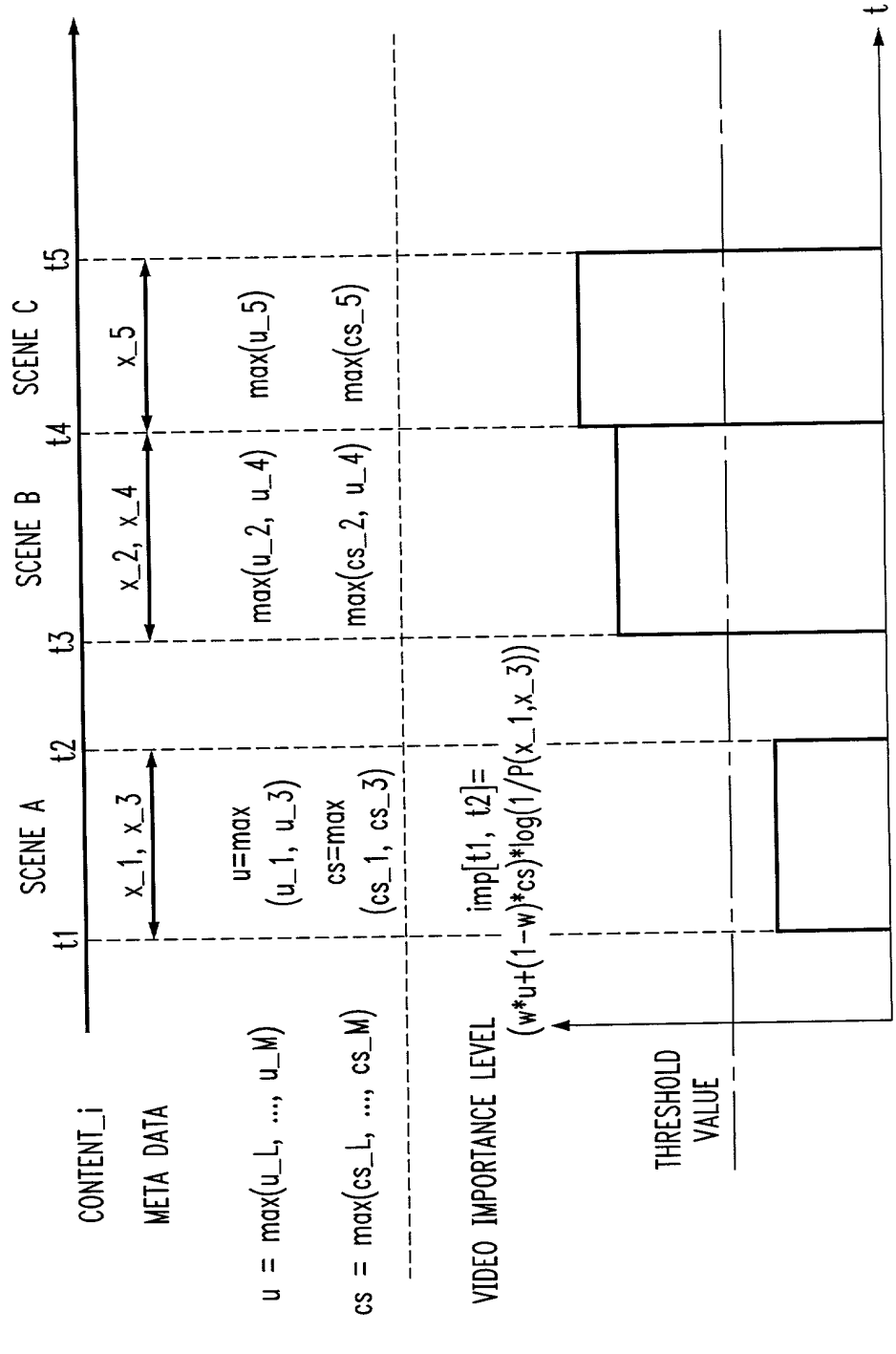

CONTENT_i
META DATA
u = max(u_L, ..., u_M)
cs = max(cs_L, ..., cs_M)
VIDEO IMPORTANCE LEVEL
(w*u+(1-w)*cs)*log(1/P(x_1,x_3))
THRESHOLD VALUE
t1
t2
t3
t4
t5
t
SCENE A
SCENE B
SCENE C
x_1, x_3
x_2, x_4
x_5
u=max (u_1, u_3)
cs=max (cs_1, cs_3)
imp[t1, t2]=
max(u_2, u_4)
max(cs_2, u_4)
max(u_5)
max(cs_5)
SCENE A
SCENE B
SCENE C

FIG. 7

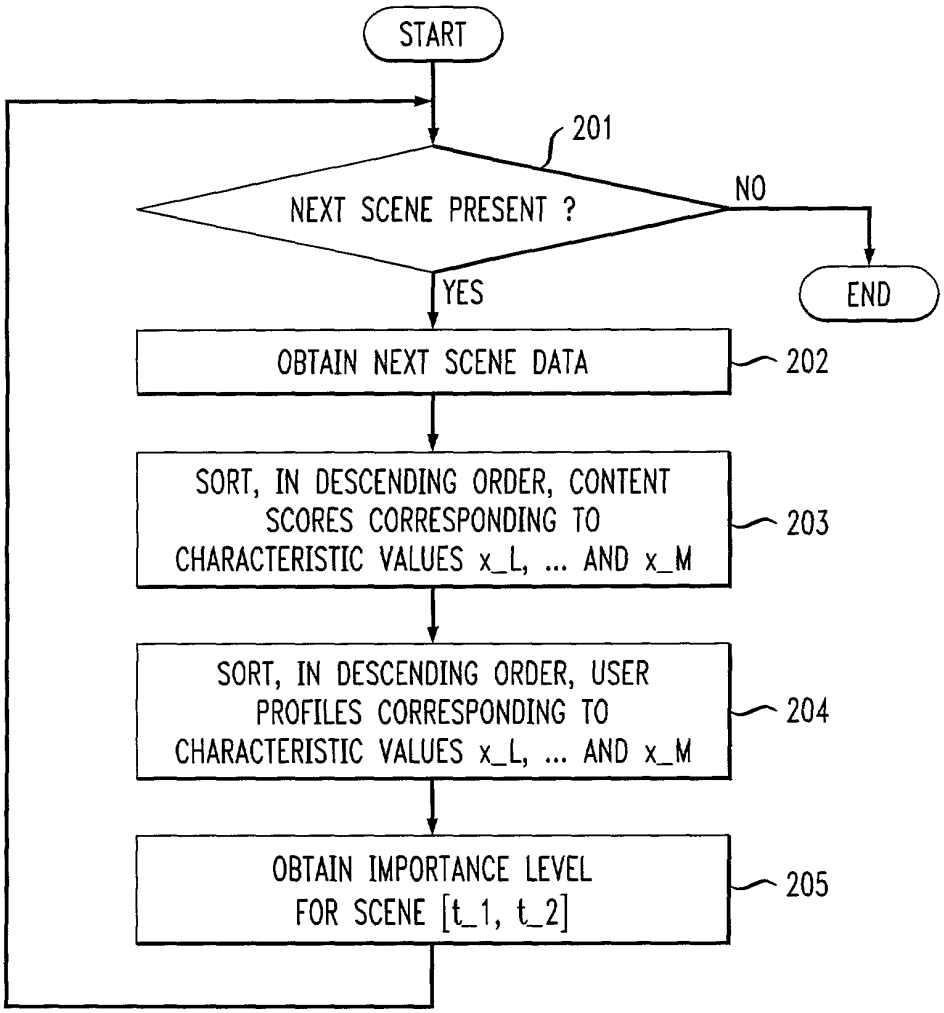

START
201
NEXT SCENE PRESENT ?
NO
END
YES
OBTAIN NEXT SCENE DATA
202
SORT, IN DESCENDING ORDER, CONTENT SCORES CORRESPONDING TO CHARACTERISTIC VALUES x_L, ... AND x_M
203
SORT, IN DESCENDING ORDER, USER PROFILES CORRESPONDING TO CHARACTERISTIC VALUES x_L, ... AND x_M
204
OBTAIN IMPORTANCE LEVEL FOR SCENE [t_1, t_2]
205

FIG. 8

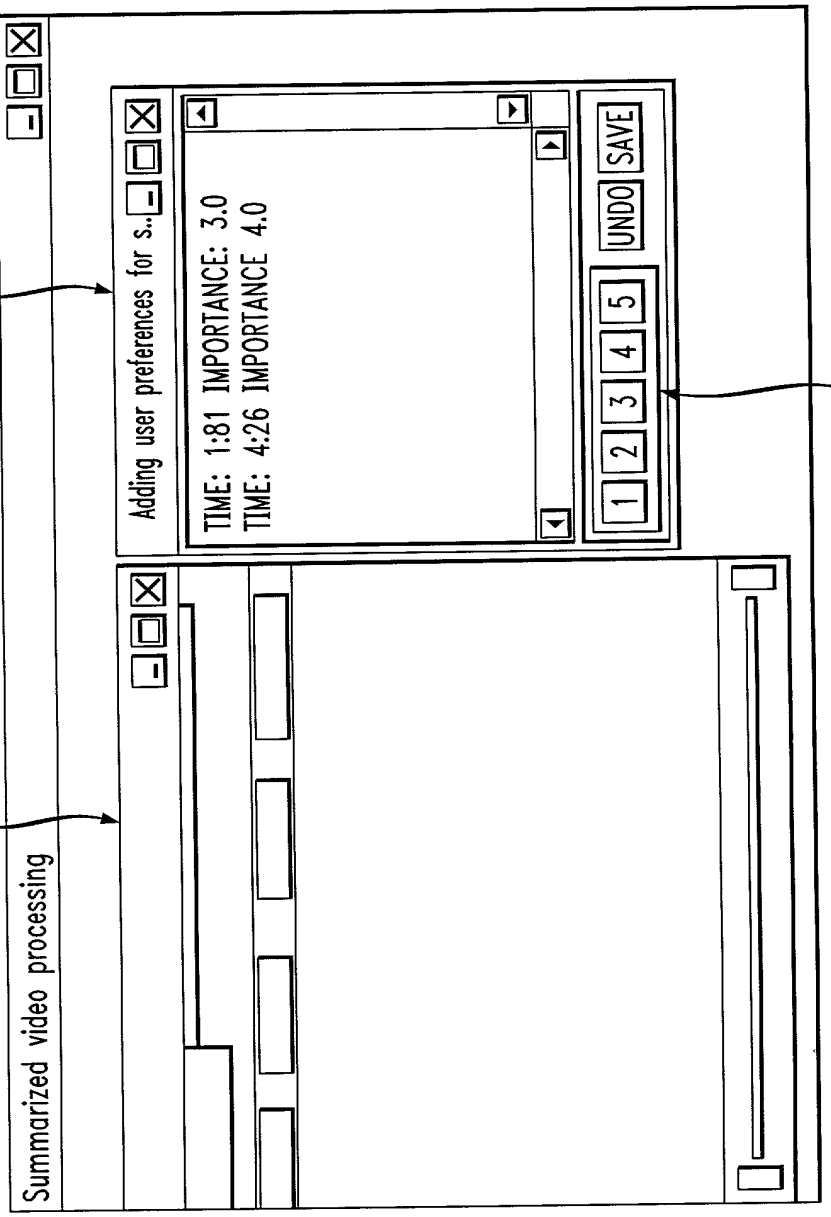


FIG. 9

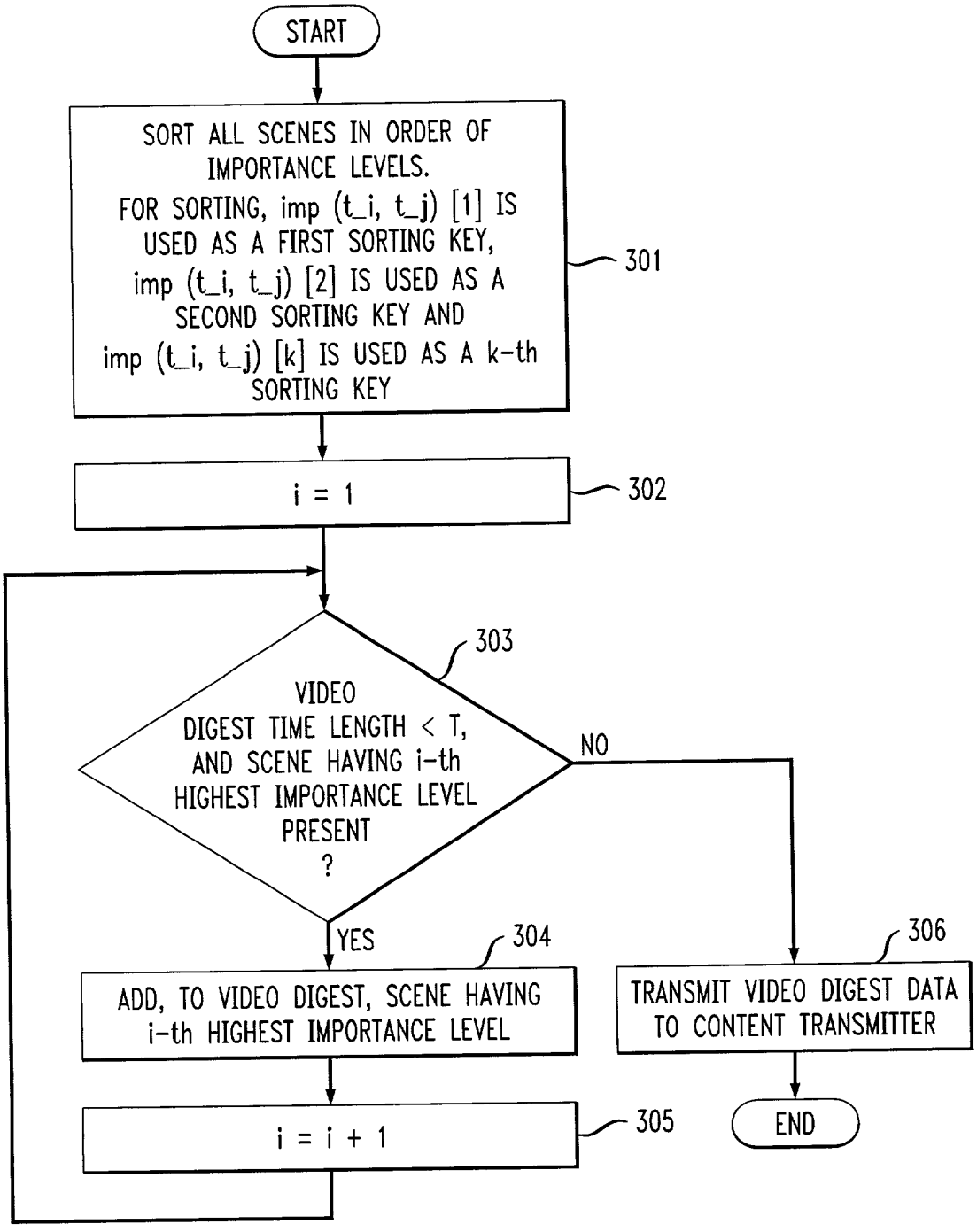

START
SORT ALL SCENES IN ORDER OF IMPORTANCE LEVELS.
FOR SORTING, imp (t_i, t_j) [1] IS USED AS A FIRST SORTING KEY,
imp (t_i, t_j) [2] IS USED AS A SECOND SORTING KEY AND
imp (t_i, t_j) [k] IS USED AS A k-th SORTING KEY
301
i = 1
302
303
VIDEO DIGEST TIME LENGTH < T, AND SCENE HAVING i-th HIGHEST IMPORTANCE LEVEL PRESENT ?
NO
YES
304
ADD, TO VIDEO DIGEST, SCENE HAVING i-th HIGHEST IMPORTANCE LEVEL
306
TRANSMIT VIDEO DIGEST DATA TO CONTENT TRANSMITTER
i = i + 1
305
END

FIG. 10

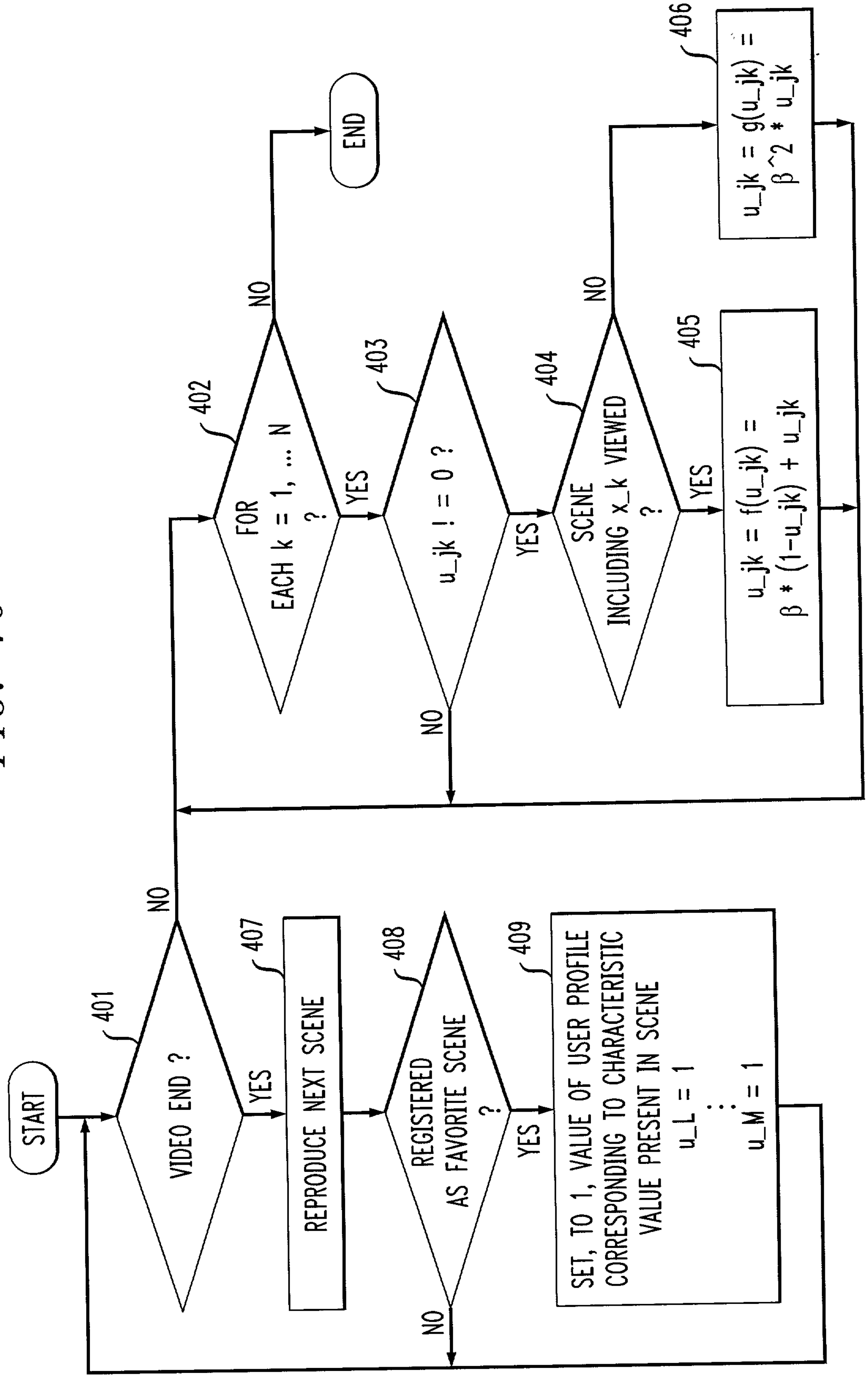
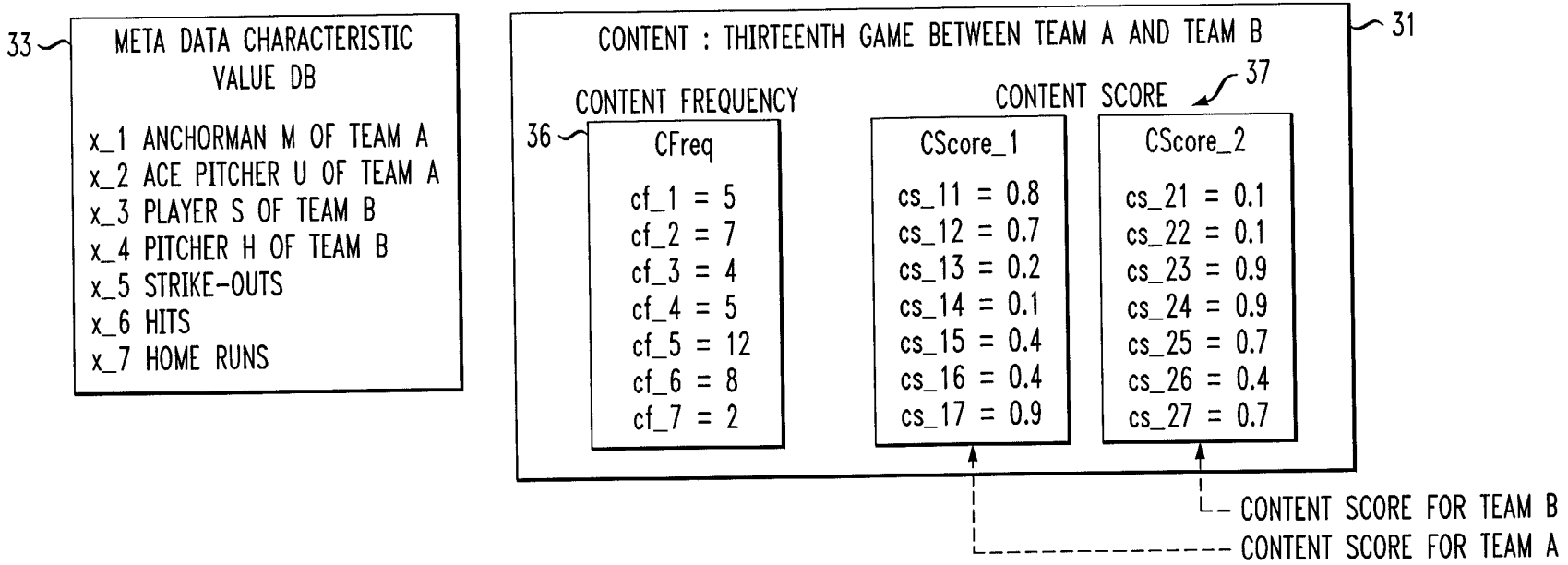

START
401
VIDEO END ?
YES
NO
407
REPRODUCE NEXT SCENE
408
REGISTERED AS FAVORITE SCENE ?
YES
NO
409
SET, TO 1, VALUE OF USER PROFILE CORRESPONDING TO CHARACTERISTIC VALUE PRESENT IN SCENE
u_L = 1
⋮
u_M = 1
402
FOR EACH k = 1, ... N ?
YES
NO
END
403
u_jk ! = 0 ?
YES
NO
404
SCENE INCLUDING x_k VIEWED ?
YES
NO
405
u_jk = f(u_jk) =
β * (1-u_jk) + u_jk
406
u_jk = g(u_jk) =
β^2 * u_jk

FIG. 11



IN THIS CASE, THE SIMULTANEOUS GENERATION PROBABILITY USED FOR THE IMPORTANCE LEVEL CALCULATION EXPRESSION IS AS FOLLOWS

$$P(x_1) = \frac{cf_1}{\sum_{i=1}^{7} cf_1}$$

GENERATION PROBABILITY

p(x_1) = 5/43
p(x_2) = 7/43
p(x_3) = 4/43
p(x_4) = 5/43
p(x_5) = 12/43
p(x_6) = 8/43
p(x_7) = 2/43

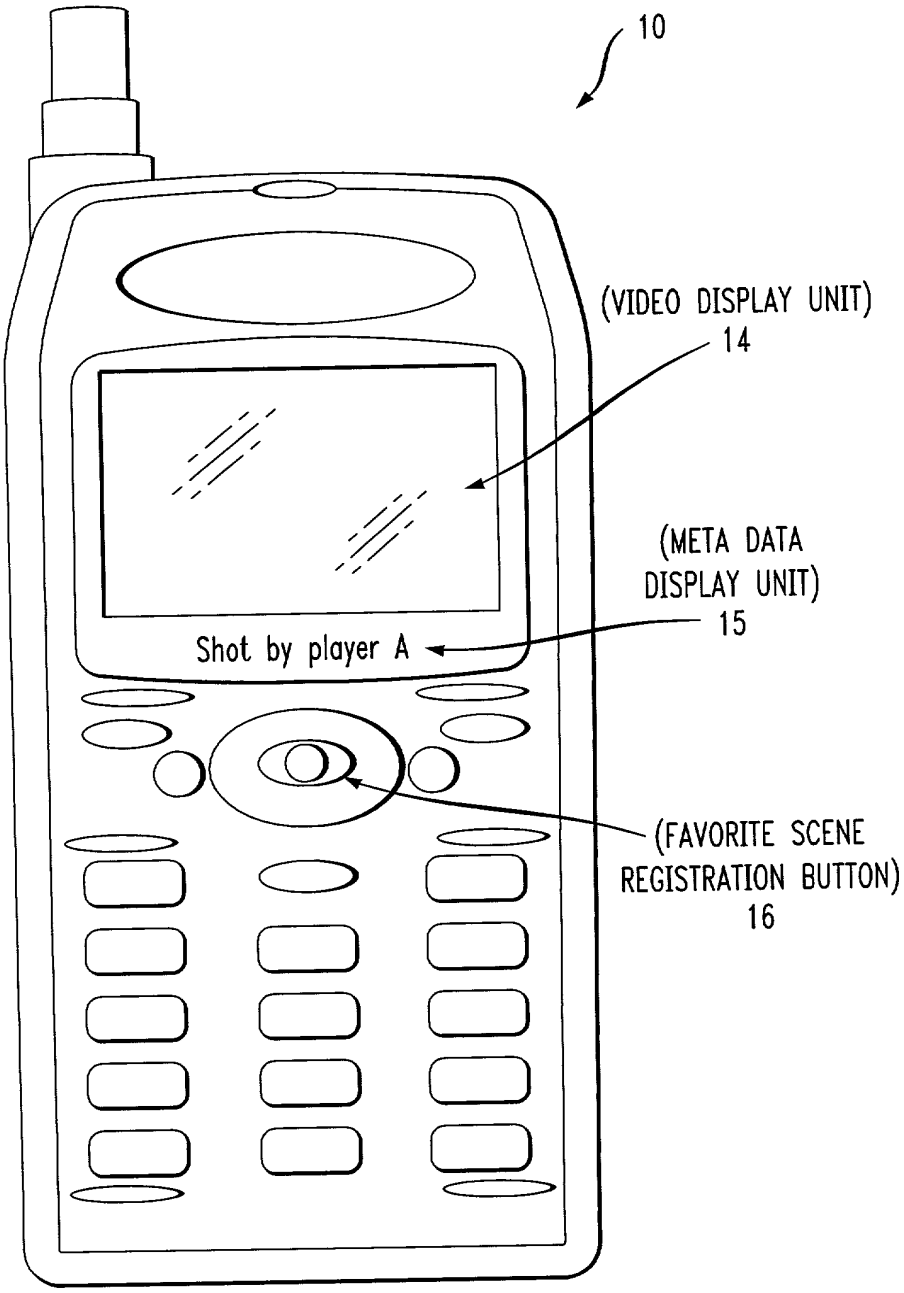
THE SIMULTANEOUS GENERATION PROBABILITY IS

P(x_1, x_2) = P(x_1)*P(x_2) = 35/1849

P(x_4, x_7) = P(x_4)*P(x_7) = 10/1849

P(x_1, x_3, x_6) = P(x_1)*P(x_3)*P(x_6) = 160/79507

FIG. 12


10
(VIDEO DISPLAY UNIT)
14
(META DATA
DISPLAY UNIT)
15
Shot by player A
(FAVORITE SCENE
REGISTRATION BUTTON)
16